

**Claims**

1. A composite polymer-coated sorbent comprising a support and a coating, wherein the support comprises a bidisperse or oligodisperse distribution of pore sizes and at least a partial coating on the surface or the sorbent, which coating comprises essentially polyanilines or derivatives of polyanilines.
2. The sorbent material according to claim 1 wherein the support is a porous inorganic material selected from the group comprising inorganic metal oxides, such as oxides of aluminium, titanium, zirconium, silicon oxides, and/or iron oxides.
3. The sorbent material according to claim 1 wherein the support is an organic material, preferably of porous structure such as cross-linked polystyrenes, polyacrylates, and polyethylenes.
4. The sorbent material according to claim 2, wherein the inorganic material with a bidisperse distribution of the pore sizes is obtainable by gelling a mixture of two silica sols with differently sized colloidal silica particles.
5. The sorbent material according to any of the foregoing claims wherein the support is in particle-like or monolithic membrane-like form.
6. The sorbent material according to any of the foregoing claims, wherein the derivatives of polyaniline are substituted or nonsubstituted alkyl anilines, aromatic systems, ethylaniline, propylanilin, and/or ethoxyanilin.
7. The sorbent material according to any of the foregoing claims wherein

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the pore sizes of the bidisperse support has a distribution of small pore sizes in the range of mean diameter 3 - 15 nm, in particular 4 - 10 nm.

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8. The sorbent material according to any of the foregoing claims wherein the pore sizes of the bidisperse support has a distribution of large pore sizes in the range of mean diameter not smaller than 25 - 50 nm but not exceeding 2.000 nm, in particular 1.000 nm.
  9. Use of a composite of at least one of the claims 1 to 8 for the simultaneous separation and purification of bio-macromolecules.